

CHAPTER 6

RESTORATION STRATEGIES IN THE MISSISSIPPI RIVER WATERSHED

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6.1. BACKGROUND.

The Watershed Water Quality Management Plan serves as a comprehensive inventory of resources and stressors in the watershed, a recommendation for control measures, and a guide for planning activities in the next five-year watershed cycle and beyond. Water quality improvement will be a result of implementing both regulatory and nonregulatory programs.

In addition to the NPDES program, some state and federal regulations, such as the TMDL and ARAP programs, address point and nonpoint issues. Construction and MS4 storm water rules (implemented under the NPDES program) have transitioned from Phase 1 to Phase 2. More information on storm water rules may be found at: <http://www.state.tn.us/environment/wpc/stormh2o/>.

This Chapter addresses point and nonpoint source approaches to water quality problems in the Tennessee Portion of the Mississippi River Watershed as well as specific NPDES permittee information.

6.2. COMMENTS FROM PUBLIC MEETINGS. Watershed meetings are open to the public, and most meetings were represented by citizens who live in the watershed, NPDES permittees, business people, farmers, and local river conservation interests. Locations for meetings were chosen after consulting with people who live and work in the watershed. Everyone with an interest in clean water is encouraged to be a part of the public meeting process. The times and locations of watershed meetings are posted at: <http://www.state.tn.us/environment/wpc/watershed/public.shtml>.

6.2.A. Year 1 Public Meeting. The first Mississippi River Watershed public meeting was held jointly with the North Fork Obion River and South Fork Obion River Watersheds on October 9, 2000, at the Union City Municipal Building. The goals of the meeting were to: (1) present, and review the objectives of, the Watershed Approach, (2) introduce local, state, and federal agency and nongovernmental organization partners, (3) review water quality monitoring strategies, and (4) solicit input from the public.

Major Concerns/Comments Voiced at Public Meeting

- Silt and sediment in Relfoot Lake and Bayou du Chien should be monitored

6.2.B. Year 3 Public Meeting. The second Mississippi River Watershed public meeting was held jointly with the North Fork Obion River and South Fork Obion River Watersheds on October 24, 2002 at the University of Tennessee-Martin campus. The goals of the meeting were to: (1) provide an overview of the watershed approach, (2) review the monitoring strategy, (3) summarize the most recent water quality assessment, (4) discuss the TMDL schedule and citizens' role in commenting on draft TMDLs, and (5) discuss BMPs and other nonpoint source tools available through the Tennessee Department of Agriculture 319 Program and NRCS conservation assistance programs.

Major Concerns/Comments Voiced at Public Meeting

- Flooding occurs more often
- Flooding occurs less often
- The COE allows levees without concern for the river (does not allow for return of natural meander) or people down stream (increased flooding).
- Rainwater (storm water) clears off the land quickly, but silt from upstream (where there are levees) comes later and persists.
- Chicken litter application stinks and puts nutrients in streams, especially near Dresden (Mud Creek)
- The Obion River is getting shallower (due to siltation), so it floods nearby woodlands and farms.

6.2.C. Year 5 Public Meeting. The third scheduled Mississippi River Watershed public meeting was held October 7, 2008 at the UT-Martin Reed Center in Martin. The meeting was held jointly with the Obion River (North Fork) and the Obion River (South Fork) Watersheds and featured six educational components:

- Overview of watershed approach flash video
- Benthic macroinvertebrate specimens and interpretation
- “Is Your Stream Healthy” self-guided slide show
- “Why We Do Biological Sampling” self-guided slide show
- GIS (Geographic Information Systems) inventory of the watershed
- Water quality and land use maps

In addition, citizens had the opportunity to make formal comments on the draft Watershed Water Quality Management Plan.

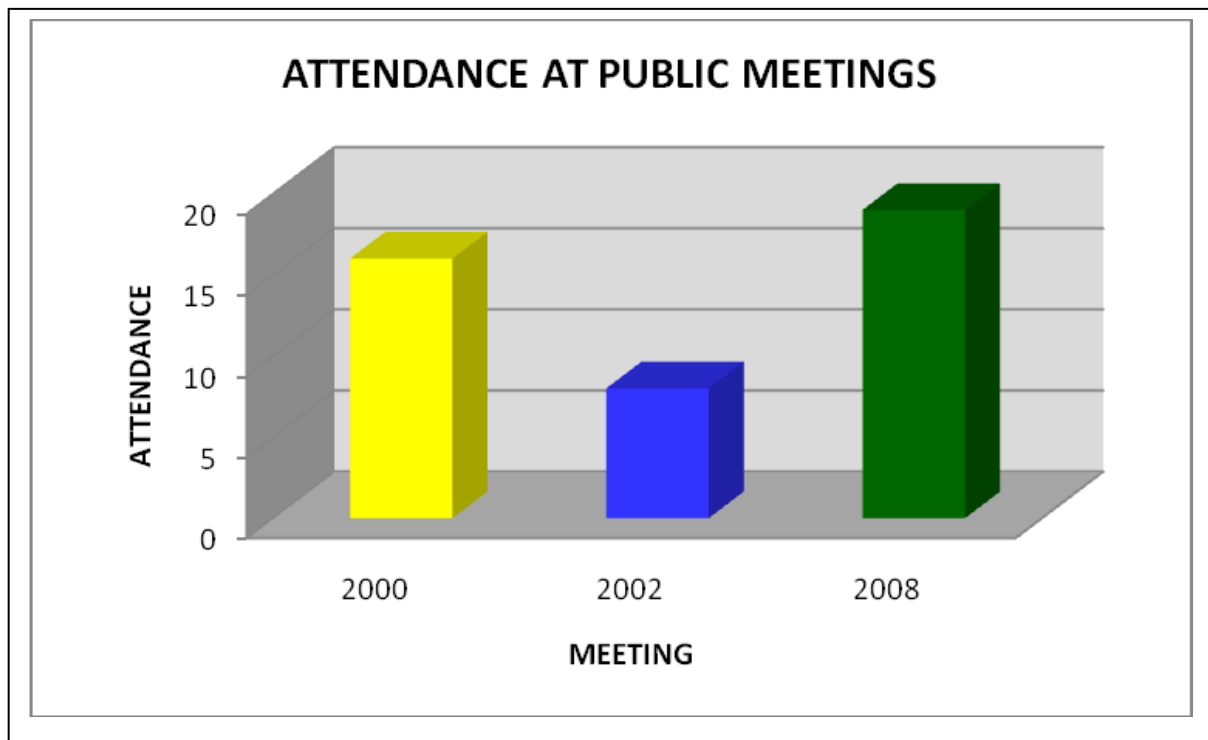


Figure 6-1. Attendance at the Mississippi River, North Fork Obion River, and South Fork Obion River Watersheds Joint Public Meetings. Attendance numbers do not include TDEC personnel.



Figure 6-2. Jackson Environmental Field Office Manager Pat Patrick Brings the Watershed Meeting to Order.



Figure 6-3. At Watershed Meetings, Citizens Learn About Benthic Macroinvertebrates (Small Invertebrates that Live on the Bottom of the Streams) in Their Watershed.



Figure 6-4. At Watershed Meetings, Participants from the Private Sector Have an Opportunity to Talk Informally with the Jackson Environmental Field Office Manager.



Figure 6-5. Maps are an Effective Way to Illustrate Water Quality Improvements in the Watershed.

6.3. APPROACHES USED.

6.3.A. Point Sources. Point source contributions to stream impairment are primarily addressed by NPDES and ARAP permit requirements and compliance with the terms of the permits. Notices of NPDES and ARAP draft permits available for public comment can be viewed at <http://www.state.tn.us/environment/wpc/wpcppo/>. Discharge monitoring data submitted by NPDES-permitted facilities may be viewed at http://www.epa.gov/enviro/html/pes/pes_query_java.html.

The purpose of the TMDL program is to identify remaining sources of pollution and allocate pollution control needs in places where water quality goals are still not being achieved. TMDL studies are tools that allow for a better understanding of load reductions necessary for impaired streams to return to compliance with water quality standards. More information about Tennessee's TMDL program may be found at: <http://www.state.tn.us/environment/wpc/tmdl/>.

Approved TMDLs:

Lower French Broad Watershed - Total Maximum Daily Load for Pathogens in the Lower French Broad Watershed in Cocke, Jefferson and Sevier Counties. Approved 12/20/2005

<http://www.state.tn.us/environment/wpc/tmdl/approvedtmdl/LowerFrenchPath.pdf>

Mississippi River Watershed - Total Maximum Daily Load for Chlordane, Dioxins, and Polychlorinated Biphenyls (PCBs) in the Mississippi River Watershed in Dyer, Lake, Lauderdale, Tipton and Shelby Counties. Approved 07/25/2008.

http://www.state.tn.us/environment/wpc/tmdl/approvedtmdl/mississippi_pcb.pdf

TMDLs are prioritized for development based on many factors.

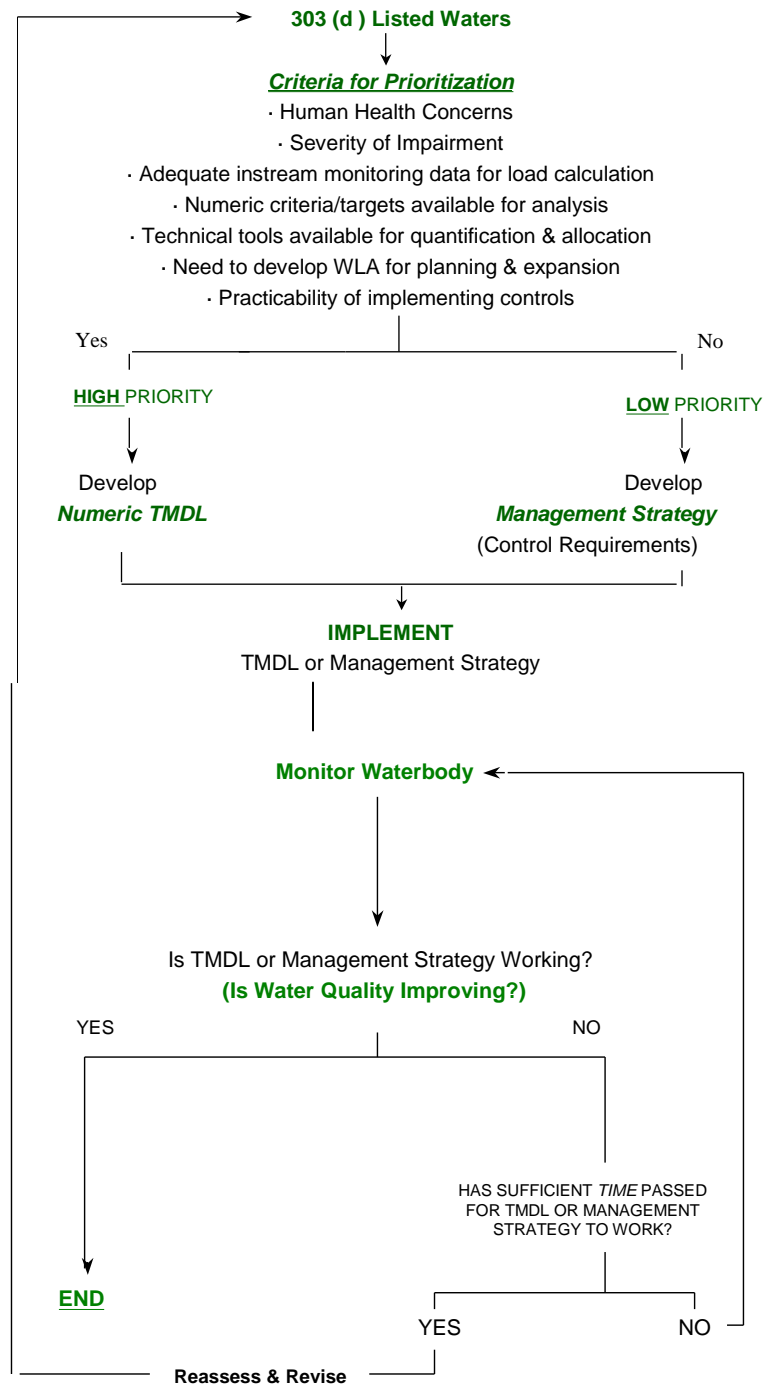


Figure 6-2. Prioritization Scheme for TMDL Development.

A few permitted discharges within the Tennessee Portion of the Mississippi River Watershed, including Tiptonville, Ridgely, Ripley, Munford and Memphis discharge suspended solids under the conditions of an NPDES permit and are reviewed during the watershed cycle for reissuance. A few also have limits on settleable solids, including Munford and the two Memphis treatment plants.

6.3.B. Nonpoint Sources

For the purpose of this management plan, the Tennessee Portion of the Mississippi River Watershed excludes the larger tributaries such as the Obion, Hatchie, Wolf and Forked Deer Rivers, which have their own management plans. The tributaries addressed in this plan are usually small, of very low gradient and, except in the Memphis area, drain agricultural land. Many are located between the river and the flood levees. Because of their low flow and slow velocities, most cannot assimilate much biodegradable waste. Common nonpoint sources of pollution in the Mississippi River Watershed include urban storm water runoff, riparian vegetation removal, agricultural practices and other habitat alterations. Since nonpoint pollution exists essentially everywhere rain falls, existing point source regulations can have only a limited effect.

There are several state and federal regulations that address contaminants impacting waters in the Tennessee Portion of the Mississippi River Watershed. Most of these are limited to point sources: a pipe or ditch. Often, controls of point sources are not sufficient to protect waters, so other measures are necessary. Some measures include efforts by landowners and volunteer groups and the possible implementation of new regulations. Many agencies, such as the Tennessee Department of Agriculture (TDA) and the Natural Resources Conservation Service (NRCS), offer financial assistance to landowners for corrective actions (like Best Management Practices) that may be sufficient for recovery of impacted streams. Many nonpoint problems will require an active civic involvement at the local level geared towards establishment of improved zoning guidelines, building codes, streamside buffer zones and greenways, and general landowner education.

The following text describes types of impairments, possible causes, and suggested improvement measures. Restoration efforts should not be limited to only those streams and measures suggested below.

6.3.B.i. Siltation.

6.3.B.i.a. From Construction Sites. Construction activities have historically been considered “nonpoint sources.” In the late 1980’s, EPA designated them as being subject to NPDES regulation if more than 5 acres were being disturbed. In the spring of 2003, that threshold became 1 acre or less than 1 acre if it’s part of a larger development. The general permit issued for such construction sites establishes conditions for maintenance of the sites to minimize pollution from storm water runoff, including requirements for installation and inspection of erosion prevention and sediment controls. Also, the general permit imposes more stringent inspection, design criteria and sediment control measures on sites in the watershed of streams that are already

impaired due to siltation or are considered high quality. Regardless of the size, no construction site is allowed to cause a condition of pollution.

In 2003 the EPA and the state expanded the number of municipalities required to obtain coverage under a permit designed to address nonpoint runoff issues: the General NPDES Municipal Separate Storm Sewer System Permit, commonly known as Phase II MS4. This permit requires the holder to develop a comprehensive storm water management program, including the adoption of local regulatory ordinances, regular inspection of construction sites and other discharges into their storm sewers, and a variety of educational, mapping, and monitoring activities. The state issues the permits, audits and oversees these local MS4 programs. The City of Memphis was already required to have a Phase I MS4 permit. Due to the rural nature of much of the rest of the watershed, and lack of large high density population centers, only a small area of unincorporated Shelby County, which has a Phase II MS4 permit, is in the Mississippi River Watershed within Tennessee.

Construction sites within a sediment-impaired watershed may also have higher priority for inspections by WPC and MS4 personnel, and are likely to have enforcement actions for failure to control erosion.

6.3.B.i.b. From Channel and/or Bank Erosion. Many streams within the Tennessee Portion of the Mississippi River Watershed suffer from varying degrees of streambank erosion. The Mississippi River and many of its tributaries have been channelized. When stream channels are altered, banks can become unstable and highly erodible. Most of the tributaries between the river and the levees are low gradient and therefore have low velocities. However, they are subject to flooding.

Some inappropriate agricultural practices have impacted the hydrology and morphology of stream channels in the Mississippi River Watershed.

The Army Corps of Engineers continues efforts to stabilize the banks of the Mississippi River and to maintain a navigation channel for shipping. They also maintain the flood levees.

The smaller tributaries that have lost their riparian zone would benefit from landowner efforts to re-establish bank vegetation. Harris Ditch, Graveyard Slough, and Sugar Creek are examples of streams that would benefit.

Regulatory Strategies

- Require post-construction run-off rates to be no greater than pre-construction rates in order to avoid in-channel erosion.
- Limit the impact of road and utility crossings of streams through better design principles.
- Restrict the use of off-highway vehicles on stream banks and in stream channels. (Example: Sugar Creek)
- Limit clearing and alteration of stream banks. Examples of streams that might benefit are Blue Bank Bayou and the many un-named tributaries in the farmed areas. *Note: Permits may be required for any work along streams.*
- Encourage or require strong local buffer ordinances.

Additional Strategies

- Better community planning and MS4 oversight for the impacts of development on small streams, especially development in growing areas such as Union City.

6.3.B.i.c. From Agriculture and Silviculture. The Water Quality Control Act exempts normal agricultural and silvicultural practices that do not result in a point source discharge. Nevertheless, efforts are being made to address impacts due to these exempted practices.

The Master Logger Program has been in place for several years to train loggers how to install Best Management Practices that lessen the impact of logging activities on streams. Recently, laws and regulations established the authority for the Commissioners of the Departments of Environment and Conservation and of Agriculture to stop the logging operation that, upon failing to install these BMPs, is causing impacts to streams.

Since the Dust Bowl era, the agriculture community has strived to protect the soil from wind and water erosion. Agencies such as the Natural resources Conservation Service (NRCS), the University of Tennessee Agricultural Extension Service, and the Tennessee Department of Agriculture are striving to identify better ways of farming, to educate the farmers, and to install the methods that address the sources of some of the impacts due to agriculture. Cost sharing is available for many of these measures.

Many sediment problems traceable to agricultural practices also involve riparian loss due to close row cropping. Lack of vegetated buffers along stream corridors is a problem in some areas of the Tennessee Portion of the Mississippi River Watershed, due both to agricultural and residential/commercial land uses. Many streams, like Blue Bank Bayou, could benefit from the establishment of more extensive riparian buffer zones.

6.3.B.ii. Pathogen Contamination.

Possible sources of pathogens are inadequate or failing septic tank systems, overflows or breaks in public sewer collection systems, poorly disinfected discharges from sewage treatment plants, and fecal matter from pets, livestock and wildlife washed into streams and storm drains. When fecal bacterial levels are shown to be consistently elevated to dangerously high levels, especially in streams with high potential for recreational uses, the division must post signage along the creek warning the public to avoid contact. Once pathogen sources have been identified and corrected, and pathogen level reductions are documented, the posting is lifted.

Permits issued by the Division of Water Pollution Control regulate discharges from point sources and require adequate control for these sources. Individual homes are required to have subsurface, on-site treatment (i.e., septic tank and field lines) if public sewers are not available. The Division of Ground Water Protection within the Jackson Environmental Field Office regulates septic tanks and field lines. The Shelby County Health Department performs this regulatory function in Shelby County. In addition to discharges to surface waters, businesses may employ subsurface treatment for domestic wastewater or surface discharge of treated process wastewater. The Division

of Water Pollution Control regulates surface water discharges and near-surface land application of treated wastewater.

Currently, only the McKellar Lake portion of the Tennessee Portion of the Mississippi River Watershed is known to have excessive pathogen contamination. It is impacted by urban areas, with contributions of bacterial contamination possibly coming from storm water runoff, sewage collection system leaks, or treatment plant operation failures. Some measures that may be necessary to control pathogens are:

Voluntary Activities

- Clean up pet waste.
- Repair failed septic systems.

Regulatory Strategies

- Strengthen enforcement of regulations governing on-site wastewater treatment.
- Determine timely and appropriate enforcement for non-complying sewage treatment plants, large and small, and their collection systems.
- Develop and enforce leash laws and controls on pet fecal material.

Additional Strategies

- Develop intensive planning in areas where sewer is not available and treatment by subsurface disposal is not an option due to poor soils, floodplains, or high water tables.
- Greater efforts by sewer utilities to identify leaking lines or overflowing manholes
- Review the pathogen limits in discharge permits to determine the need for further restriction.

6.3.B.iii. Excessive Nutrients and/or Dissolved Oxygen Depletion.

These two impacts are usually listed together because high nutrients often contribute to low dissolved oxygen within a stream. Since nutrients often have the same source as pathogens, the measures previously listed can also address many of these problems. Elevated nutrient loadings are also often associated with urban runoff from impervious surfaces, from fertilized lawns and croplands, and faulty sewage disposal processes. Nutrients are often transported with sediment, so many of the measures designed to reduce sediment runoff will also aid in preventing organic enrichment of streams and lakes.

Dissolved oxygen depletion can also be due to the discharge of other biodegradable materials. These are limited in NPDES permits as ammonia and as either Biological Oxygen Demand (BOD) or Carbonaceous Oxygen Demand (CBOD).

Some sources of nutrients can be addressed by:

Voluntary Activities

- Educate homeowners and lawn care companies in the proper application of fertilizers.
- Encourage landowners, developers, and builders to leave stream buffer zones. Streamside vegetation can filter out many nutrients and other pollutants before

they reach the stream. These riparian buffers are also vital along livestock pastures. Many streams in the Mississippi River Watershed within agricultural areas would benefit from additional riparian buffers.

- Use grassed drainage ways that can remove fertilizer before it enters streams.
- Use native plants for landscaping since they don't require as much fertilizer and water.
- Develop better overall storm water management in urban, residential or rural areas, including retrofitting existing commercial lots, homes, roadways or agricultural areas with BMPs that address both storm water quality and quantity. This would especially improve the streams and lakes currently polluted by excessive nutrient inputs, such as Poplar Tree Lake.

Physical changes to streams can prevent them from providing enough oxygen to biodegrade the materials that are naturally present. A few additional actions can address this problem:

- Maintain shade over a stream. Cooler water can hold more oxygen and retard the growth of algae. As a general rule, all stream channels suffer from some canopy removal. An intact riparian zone also acts as a buffer to filter out nutrient loads before they enter the water.
- Discourage impoundments. Ponds and lakes do not aerate water, and cause many water quality problems downstream. There are a number of wildlife management areas and refuges within the Mississippi River Watershed. Most are located around lakes formed from old ox-bows of the river. Any new impoundments must be carefully located and designed. *Note: Permits are required for any work on a stream, including impoundments.*

Regulatory Strategies.

- Strengthen enforcement of regulations governing on-site wastewater treatment.
- Impose more stringent permit limits for nutrients discharged from sewage treatment plants.
- Impose timely and appropriate enforcement for noncomplying sewage treatment plants, large and small, and their collection systems.
- Support and train local MS4 programs within municipalities to deal with storm water pollution issues and require additional storm runoff quality control measures.
- Require nutrient management plans for all golf courses.

Additional Strategies

- Encourage TDA- and NRCS-sponsored educational programs targeted to agricultural landowners and aimed at better nutrient management, as well as information on technology-based application tools.

6.3.B.iv. Toxins and Other Materials.

Although some toxic substances are discharged directly into waters of the state from a point source, many of these materials are washed in during rainfalls from an upland location, or via improper waste disposal that contaminates groundwater. In the Tennessee Portion of the Mississippi River Watershed, a relatively small number of

streams are damaged by toxins in storm water runoff from industrial facilities or urban areas. More stringent inspection and regulation of permitted industrial facilities, and local storm water quality initiatives and regulations, could help reduce the amount of contaminated runoff reaching state waters. An example of a water body that would benefit from these measures is McKellar Lake.

Individuals may also cause contaminants to enter streams by activities that may be attributed to apathy or the lack of knowledge or civility. Litter in roadside ditches, garbage bags tossed over bridge railings, paint brushes washed off over storm drains, and oil drained into ditches are all blatant examples of pollution in streams.

Some of these problems can be addressed by:

Voluntary Activities

- Provide public education.
- Paint warnings on storm drains that connect to a stream.
- Sponsor community clean-up days.
- Landscape public areas.
- Encourage public surveillance of their streams and reporting of dumping activities to their local authorities.

Regulatory Strategies

- Continue to prohibit illicit discharges to storm drains and to search them out.
- Strengthen litter law enforcement at the local level.
- Increase the restrictions on storm water runoff from industrial facilities.

6.3.B.v. Habitat Alteration.

The alteration of the habitat within a stream can have severe consequences. Whether it is the removal of the vegetation providing a root system network for holding soil particles together, the release of sediment, which increases the bed load and covers benthic life and fish eggs, the removal of gravel bars, “cleaning out” creeks with heavy equipment, or the impounding of the water in ponds and lakes, many alterations impair the use of the stream for designated uses. Habitat alteration also includes the draining or filling of wetlands.

Many streams within the Tennessee Portion of the Mississippi River Watershed suffer from some degree of habitat alteration, especially riparian loss and bank disturbances from agricultural practices. Although large-scale public projects such as highway construction can alter significant portions of streams, individual landowners and developers are responsible for the vast majority of stream alterations. Some measures that can help address these problems are:

Voluntary Activities

- Sponsor litter pickup days to remove litter that might enter streams
- Organize stream cleanups removing trash, limbs and debris before they cause blockage. Graveyard Slough in Tiptonville is an example of a stream that would benefit.

- Avoid use of heavy equipment to “clean out” streams (*Instream work other than debris removal will require an Aquatic Resource Alteration Permit (ARAP)*).
- Plant native vegetation along streams to stabilize banks and provide habitat
- Encourage developers to avoid extensive use of culverts in streams.

Regulatory Strategies

- Restrict modification of streams by means such as culverting, lining, or impounding.
- Require mitigation for impacts to streams and wetlands when modifications are allowed.
- Increased enforcement may be needed when violations of current regulations occur.

6.3.B.vi. Storm Water.

MS4 discharges are regulated through the Phase I or II NPDES-MS4 permits. These permits require the development and implementation of a Storm Water Management Program (SWMP) that will reduce the discharge of pollutants to the maximum extent practicable and not cause or contribute to violations of state water quality standards. The NPDES General Permit for Discharges from Phase I and II MSF facilities can be found at:

<http://www.state.tn.us/environment/wpc/stormh2o/>.

For discharges into impaired waters, the MS4 General Permit requires that SWMPs include a section describing how discharges of pollutants of concern will be controlled to ensure that they do not cause or contribute to instream exceedences of water quality standards. Specific measurements and BMPs to control pollutants of concern must also be identified. In addition, MS4s must implement the proposed waste load allocation provisions of an applicable TMDL (i.e., siltation/habitat alteration, pathogens) and describe methods to evaluate whether storm water controls are adequate to meet the waste load allocation. In order to evaluate SWMP effectiveness and demonstrate compliance with specified waste load allocations, MS4s are encouraged to develop and implement appropriate monitoring programs by the designated date.

Some storm sewer discharges are not regulated through the NPDES MS4 program. Strategies to address runoff in these urban areas include adapting Tennessee Growth Readiness Program (TGRP) educational materials to the watershed. TGRP is a statewide program built on existing best management practices from the Nonpoint Education for Municipal Officials program and the Center for Watershed Protection. TGRP developed the program to provide communities and counties with tools to design economically viable and watershed friendly developments. The program assists community leaders in reviewing current land use practices, determining impacts of imperviousness on watershed functions, and allowing them to understand the economics of good watershed management and site design.

Only the City of Memphis and Shelby County have MS4 permits that include areas in the Tennessee Portion of the Mississippi River watershed.

6.4. PERMIT REISSUANCE PLANNING

Under the *Tennessee Water Quality Control Act*, municipal, industrial and other dischargers of wastewater must obtain a permit from the Division. Approximately 1,700 permits have been issued in Tennessee under the federally delegated National Pollutant Discharge Elimination System (NPDES). These permits establish pollution control and monitoring requirements based on protection of designated uses through implementation of water quality standards and other applicable state and federal rules.

The following three sections provide specific information on municipal, industrial, and water treatment plant active permit holders in the Tennessee Portion of the Mississippi River Watershed. Compliance information was obtained from EPA's Permit Compliance System (PCS). All data was queried for a five-year period between May 1, 2002 and May 31, 2007. PCS can be accessed publicly through EPA's Envirofacts website. This website provides access to several EPA databases to provide the public with information about environmental activities that may affect air, water, and land anywhere in the United States:

http://www.epa.gov/enviro/html/ef_overview.html

Stream Segment information, including designated uses and impairments, are described in detail in Chapter 3, *Water Quality Assessment of the Tennessee Portion of the Mississippi River Watershed*.

6.4.A. Municipal Permits

TN0026409 Tiptonville-City Lagoon

Discharger rating: Minor
City: Tiptonville
County: Lake
EFO Name: Jackson
Issuance Date: 5/31/06
Expiration Date: 10/31/10
Receiving Stream(s): Mississippi River at mile 872.5
HUC-12: 080101000301
Effluent Summary: Treated domestic wastewater from Outfall 001
Treatment system: Lagoon system

SEGMENT	TN08010100001_4000
Name	Mississippi River
Size	74
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Domestic Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Sedimentation/Siltation, Polychlorinated biphenyls, Chlordane, Physical substrate habitat alterations, Nitrates, Dioxin (including 2,3,7,8-TCDD)
Sources	Grazing in Riparian or Shoreline Zones, Non-irrigated Crop Production, Sources Outside State Jurisdiction or Borders, Dredging (e.g., for Navigation Channels), Contaminated Sediments

Table 6-1. Stream Segment Information for Tiptonville-City Lagoon.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD % removal	All Year	65	Percent	MAvg % Removal	3/Week	Calculated	% Removal
BOD5	All Year	65	mg/L	DMax Conc	Weekly	Composite	Effluent
BOD5	All Year	363	lb/day	DMax Load	Weekly	Composite	Effluent
BOD5	All Year	279	lb/day	WAvg Load	Weekly	Composite	Effluent
BOD5	All Year	251	lb/day	MAvg Load	Weekly	Composite	Effluent
BOD5	All Year	50	mg/L	WAvg Conc	Weekly	Composite	Effluent
BOD5	All Year	45	mg/L	MAvg Conc	Weekly	Composite	Effluent
Bypass of Treatment (occurrences)	All Year		Occurrences/Month	MAvg Load	Continuous	Visual	Wet Weather
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	487	#/100mL	MAvg Ari Mean	Monthly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Continuous	Effluent
Overflow Use Occurrences	All Year		Occurrences/Month	MAvg Load	Continuous	Visual	Non Wet Weather
Overflow Use Occurrences	All Year		Occurrences/Month	MAvg Load	Continuous	Visual	Wet Weather
Settleable Solids	All Year	1	mL/L	DMax Conc	Weekly	Composite	Effluent
TRC	All Year	2	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	120	mg/L	DMax Conc	Weekly	Composite	Effluent
TSS	All Year	559	lb/day	MAvg Load	Weekly	Composite	Effluent
TSS	All Year	670	lb/day	DMax Load	Weekly	Composite	Effluent
TSS	All Year	615	lb/day	DMax Load	Weekly	Composite	Effluent
TSS	All Year	100	mg/L	MAvg Conc	Weekly	Composite	Effluent
TSS	All Year	110	mg/L	WAvg Conc	Weekly	Composite	Effluent
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-2. Permit Limits for Tiptonville-City Lagoon.

Compliance History:

The following numbers of exceedences were noted in PCS:

- 4 Dissolved Oxygen
- 1 Total Suspended Solids (TSS)
- 1 Biological Oxygen Demand

Enforcement:

NOV for late permit application on 8/31/05.

Comments:

Compliance Evaluation Inspection on 5/18/07: Tiptonville has changed their plan to upgrade their treatment facility. They now want to divide their existing lagoon into four cells with aeration in each cell. They also want to patch the existing lagoon liner and switch from gas chlorine to sodium hypochlorite. The thermometers in the composite samplers are in process of being installed. Outfall sign is in process of installation and the flow meters are to be replaced with the upcoming projects.

A new port is being built in Tiptonville. The facility has a new operator and inflow and infiltration problems within the collection system are expected to improve.

TN0062529 Ridgley STP

Discharger rating: Minor
City: Ridgely
County: Lake
EFO Name: Jackson
Issuance Date: 1/31/06
Expiration Date: 1/31/10
Receiving Stream(s): Mississippi River Mile 857.5
HUC-12: 080101000301
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Lagoon system

SEGMENT	TN08010100001_4000
Name	Mississippi River
Size	74
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Domestic Water Supply (Supporting), Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Sedimentation/Siltation, Polychlorinated biphenyls, Chlordane, Physical substrate habitat alterations, Nitrates, Dioxin (including 2,3,7,8-TCDD)
Sources	Grazing in Riparian or Shoreline Zones, Non-irrigated Crop Production, Sources Outside State Jurisdiction or Borders, Dredging (e.g., for Navigation Channels), Contaminated Sediments

Table 6-3. Stream Segment Information for Ridgley STP.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD % removal	All Year	65	Percent	MAvg % Removal	Weekly	Calculated	% Removal
BOD5	All Year	65	mg/L	DMax Conc	Weekly	Grab	Effluent
BOD5	All Year	108	lb/day	DMax Load	Weekly	Grab	Effluent
BOD5	All Year	83	lb/day	WAvg Load	Weekly	Grab	Effluent
BOD5	All Year	75	lb/day	MAvg Load	Weekly	Grab	Effluent
BOD5	All Year		mg/L	MAvg Conc	Weekly	Grab	Influent (Raw Sewage)
BOD5	All Year		mg/L	DMax Conc	Weekly	Grab	Influent (Raw Sewage)
BOD5	All Year	50	mg/L	WAvg Conc	Weekly	Grab	Effluent
BOD5	All Year	45	mg/L	MAvg Conc	Weekly	Grab	Effluent
Bypass of Treatment (Occurrences)	All Year		Occurrences/Month	MAvg Load	Continuous	Visual	Wet Weather
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	941	#/100mL	DMax Conc	Weekly	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	Weekly	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Weekdays	Instantaneous	Effluent
Overflow Use (Occurrences)	All Year		Occurrences/Month	MAvg Load	Continuous	Visual	Wet Weather
Overflow Use (Occurrences)	All Year		Occurrences/Month	MAvg Load	Continuous	Visual	Non Wet Weather
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TRC	All Year	2	mg/L	DMax Conc	Weekdays	Grab	Effluent
TSS	All Year	120	mg/L	DMax Conc	Weekly	Grab	Effluent
TSS	All Year	200	lb/day	DMax Load	Weekly	Grab	Effluent
TSS	All Year	183	lb/day	WAvg Load	Weekly	Grab	Effluent
TSS	All Year	100	mg/L	MAvg Conc	Weekly	Grab	Effluent
TSS	All Year	167	lb/day	MAvg Load	Weekly	Grab	Effluent
TSS	All Year	110	mg/L	WAvg Conc	Weekly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-4. Permit Limits for Ridgley STP.

Compliance History:

The following numbers of exceedences were noted in PCS:

- 37 Biological Oxygen Demand (BOD)
- 12 Total Suspended Solids (TSS)
- 1 Dissolved Oxygen

Comments:

None

TN0078191 City of Ripley Wastewater Lagoon

Discharger rating: Minor
City: Ripley
County: Lake
EFO Name: Jackson
Issuance Date: 3/31/06
Expiration Date: 5/31/10
Receiving Stream(s): Mississippi River Mile 800.5
HUC-12: 080101000303
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Lagoon system

SEGMENT	TN08010100001_3000
Name	Mississippi River
Size	45.2
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting), Domestic Water Supply (Supporting)
Causes	Nitrates, Physical substrate habitat alterations, Sedimentation/Siltation, Chlordane, Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls
Sources	Grazing in Riparian or Shoreline Zones, Non-irrigated Crop Production, Sources Outside State Jurisdiction or Borders, Dredging (e.g., for Navigation Channels), Contaminated Sediments

Table 6-5. Stream Segment Information for City of Ripley Wastewater Lagoon.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
48hr LC50: <i>Ceriodaphnia Dubia</i>	All Year		Percent	DMin Conc	See Permit	Grab	
48hr LC50: Fathead Minnows	All Year		Percent	DMin Conc	See Permit	Grab	
Ammonia as N (Total)	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
Ammonia as N (Total)	All Year		lb/day	DMax Load	Semi-annually	Grab	Effluent
Bypass of Treatment (occurrences)	All Year		Occurences/Month	MAvg Load	Continuous	Visual	Wet Weather
CBOD5	All Year	65	Percent	MAvg % Removal	Monthly	Calculated	Effluent
CBOD5	All Year	30	mg/L	MAvg Conc	3/Week	Grab	Effluent
CBOD5	All Year	45	mg/L	WAvg Conc	3/Week	Grab	Effluent
CBOD5	All Year	1551	lb/day	DMax Load	3/Week	Grab	Effluent
CBOD5	All Year	60	mg/L	DMax Conc	3/Week	Grab	Effluent
CBOD5	All Year	1163	lb/day	WAvg Load	3/Week	Grab	Effluent
CBOD5	All Year	776	lb/day	MAvg Load	3/Week	Grab	Effluent
CBOD5	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
CBOD5	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
Chlorine Free Available	All Year	2	mg/L	DMax Conc	Weekdays	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	941	#/100mL	DMax Conc	3/Week	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
Flow	All Year		MGD	MAvg Conc	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Conc	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	DMax Conc	Daily	Continuous	Effluent
Flow	All Year		MGD	DMax Conc	Daily	Continuous	Influent (Raw Sewage)
Nitrite + Nitrate Total (as N)	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
Nitrite + Nitrate Total (as N)	All Year		lb/day	DMax Load	Semi-annually	Grab	Effluent
Overflow Use Occurences	All Year		Occurences/Month	MAvg Load	Continuous	Visual	Wet Weather
Overflow Use Occurences	All Year		Occurences/Month	MAvg Load	Continuous	Visual	Non Wet Weather
Phosphorus Total	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
Phosphorus Total	All Year		lb/day	DMax Load	Semi-annually	Grab	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	Weekdays	Grab	Effluent
TKN: Total Kjeldahl Nitrogen	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
TKN: Total Kjeldahl Nitrogen	All Year		lb/day	DMax Load	Semi-annually	Grab	Effluent
TSS	All Year	55	mg/L	MAvg Conc	3/Week	Grab	Effluent
TSS	All Year	80	mg/L	WAvg Conc	3/Week	Grab	Effluent
TSS	All Year	110	mg/L	DMax Conc	3/Week	Grab	Effluent
TSS	All Year	2844	lb/day	DMax Load	3/Week	Grab	Effluent
TSS	All Year	2068	lb/day	WAvg Load	3/Week	Grab	Effluent
TSS	All Year	1422	lb/day	MAvg Load	3/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent

Table 6-6. Permit Limits for City of Ripley Wastewater Lagoon.

Comments:

New wastewater treatment lagoon and outfall to serve future growth and needs of local industry. Will replace existing mechanical treatment plant and municipal and industrial discharges to Cane Creek and its tributaries.

Compliance Evaluation Inspection on March 14, 2007: The plant has been in operation for approximately 4 months. Although there is still a problem with the influent flow meter and aerators in the first cell, the lagoon is operating well within its limits.

TN0020729 Memphis-TE Maxson STP South Plant

Discharger rating: Major
City: Ripley
County: Lake
EFO Name: Jackson
Issuance Date: 4/01/00
Expiration Date: 3/31/05
Receiving Stream(s): Mississippi River at Mile 725
HUC-12: 080101000303
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Waste Activated Sludge to anaerobic dig to sludge lagoon;
 primary to belt press

SEGMENT	TN08010100001_1000
Name	Mississippi River
Size	24.9
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Physical substrate habitat alterations, Sedimentation/Siltation, Chlordane, Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls, Nitrates
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4), Grazing in Riparian or Shoreline Zones, Non-irrigated Crop Production, Sources Outside State Jurisdiction or Borders, Dredging (e.g., for Navigation Channels), Contaminated Sediments

Table 6-7. Stream Segment Information for Memphis-TE Maxson STP So Plant.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD % removal	All Year	40	Percent	DMin % Removal	Daily	Calculated	% Removal
BOD % removal	All Year	85	Percent	MAvg % Removal	Daily	Calculated	% Removal
BOD5	All Year	84	mg/L	DMax Conc	Daily	Composite	Effluent
BOD5	All Year		mg/L	DMax Conc	Daily	Composite	Influent (Raw Sewage)
BOD5	All Year	47288	lb/day	DMax Load	Daily	Composite	Effluent
BOD5	All Year	63	mg/L	MAvg Conc	Daily	Composite	Effluent
BOD5	All Year	31525	lb/day	MAvg Load	Daily	Composite	Effluent
BOD5	All Year		mg/L	MAvg Conc	Daily	Composite	Influent (Raw Sewage)
BOD5	All Year	42	mg/L	WAvg Conc	Daily	Composite	Effluent
Bypass of Treatment (Occurrences)	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Wet Weather
D.O.	All Year	1	mg/L	DMin Conc	Daily	Grab	Effluent
Dioxin	All Year		PCI/L	DMax Conc	Annually	Grab	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Organic Pesticide Chemicals (40cfr455)	All Year		PCI/L	DMax Conc	Annually	Grab	Effluent
Overflow Use Occurrences	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Wet Weather
Overflow Use Occurrences	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Non Wet Weather
Settleable Solids	All Year	1	mL/L	DMax Conc	Daily	Composite	Effluent
TSS	All Year	96	mg/L	DMax Conc	Daily	Composite	Effluent
TSS	All Year	36029	lb/day	MAvg Load	Daily	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	Daily	Composite	Influent (Raw Sewage)
TSS	All Year	54043	lb/day	DMax Load	Daily	Composite	Effluent
TSS	All Year	48	mg/L	WAvg Conc	Daily	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	Daily	Composite	Influent (Raw Sewage)
TSS	All Year	72	mg/L	MAvg Conc	Daily	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	Daily	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	Daily	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Daily	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Daily	Grab	Effluent

Table 6-8. Permit Limits for Memphis-TE Maxson STP So Plant.

Compliance History:

The following numbers of exceedences were noted in PCS:

- 4 Total Suspended Solids (TSS)
- 8 Biological Oxygen Demand (BOD)
- 1 Dissolved Oxygen
- 1524 Overflows

Comments:

This is Memphis' south plant and TDEC is working on their new permit. It hasn't gone out for public notice yet. We are also working on their north plant permit renewal (M.C. Stiles STP TN0020711) - not on public notice as of 7/3/07. Memphis will be setting up a study to determine whether or not STPs need to disinfect effluent discharged into the Mississippi River.

4/10/06 Compliance Evaluation Inspection: In Compliance

11/07/05 Compliance Evaluation Inspection: In Compliance

TN0020711 Memphis-Maynard C. Stiles STP

Discharger rating: Minor
City: Memphis
County: Shelby
EFO Name: Memphis
Issuance Date: 4/01/00
Expiration Date: 3/31/05
Receiving Stream(s): Mississippi River at Mile 738.8
HUC-12: 080101000303
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Waste Activated Sludge to anaerobic lagoons to belt press to dedicated site

SEGMENT	TN08010100001_1000
Name	Mississippi River
Size	24.9
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Physical substrate habitat alterations, Sedimentation/Siltation, Chlordane, Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls, Nitrates
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4), Grazing in Riparian or Shoreline Zones, Non-irrigated Crop Production, Sources Outside State Jurisdiction or Borders, Dredging (e.g., for Navigation Channels), Contaminated Sediments

Table 6-9. Stream Segment Information for Memphis-Maynard C. Stiles STP.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD % removal	All Year	40	Percent	DMin % Removal	Daily	Calculated	% Removal
BOD % removal	All Year	85	Percent	MAvg % Removal	Daily	Calculated	% Removal
BOD5	All Year	90	mg/L	DMax Conc	Daily	Composite	Effluent
BOD5	All Year		mg/L	DMax Conc	Daily	Composite	Influent (Raw Sewage)
BOD5	All Year	76561	lb/day	DMax Load	Daily	Composite	Effluent
BOD5	All Year	68	mg/L	MAvg Conc	Daily	Composite	Effluent
BOD5	All Year	50666	lb/day	MAvg Load	Daily	Composite	Effluent
BOD5	All Year		mg/L	MAvg Conc	Daily	Composite	Influent (Raw Sewage)
BOD5	All Year	45	mg/L	WAvg Conc	Daily	Composite	Effluent
Bypass of Treatment (Occurrences)	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Wet Weather
D.O.	All Year	1	mg/L	DMin Conc	Daily	Grab	Effluent
DDT	All Year	0.000001	mg/L	MAvg Conc	Annually	Composite	Effluent
Dieldrin	All Year	1.4E-06	mg/L	MAvg Conc	Annually	Composite	Effluent
Dioxin	All Year		mg/L	DMax Conc	Annually	Composite	Effluent
Flow	All Year		MGD	DMax Load	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Continuous	Effluent
Organic Pesticide Chemicals (40cfr455)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Overflow Use Occurences	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Wet Weather
Overflow Use Occurences	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Non Wet Weather
Settleable Solids	All Year	1	mL/L	DMax Conc	Daily	Composite	Effluent
TSS	All Year	104	mg/L	DMax Conc	Daily	Composite	Effluent
TSS	All Year	58547	lb/day	MAvg Load	Daily	Composite	Effluent
TSS	All Year		mg/L	DMax Conc	Daily	Composite	Influent (Raw Sewage)
TSS	All Year	87820	lb/day	DMax Load	Daily	Composite	Effluent
TSS	All Year	52	mg/L	WAvg Conc	Daily	Composite	Effluent
TSS	All Year		mg/L	MAvg Conc	Daily	Composite	Influent (Raw Sewage)
TSS	All Year	78	mg/L	MAvg Conc	Daily	Composite	Effluent
TSS % Removal	All Year	40	Percent	DMin % Removal	Daily	Calculated	% Removal
TSS % Removal	All Year	85	Percent	MAvg % Removal	Daily	Calculated	% Removal
pH	All Year	9	SU	DMax Conc	Daily	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Daily	Grab	Effluent

Table 6-10. Permit Limits for Memphis-Maynard C. Stiles STP.

Compliance History:

The following numbers of exceedences were noted in PCS:

- 13 Biological Oxygen Demand (BOD)
- 4 Total Suspended Solids (TSS)
- 3 Suspended Solids % Removal
- 3 Settleable Solids
- 1553 Overflows
- 4 Bypasses

Comments:

Staff is working on their north plant permit renewal (M.C. Stiles STP TN0020711) - not on public notice (as of 7/3/07). Memphis will be setting up a study to determine whether or not STPs need to disinfect effluent discharged into the Mississippi River.

4/10/06 Compliance Evaluation Inspection: In Compliance

10/24/05 Compliance Evaluation Inspection: In Compliance

TN0062499 Munford Sewer Department Lagoon

Discharger rating: Major
City: Munford
County: Tipton
EFO Name: Memphis
Issuance Date: 4/01/06
Expiration Date: 5/31/10
Receiving Stream(s): Mississippi River Mile 761
HUC-12: 080101000401
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: Lagoon system

SEGMENT	TN08010100001_2000
Name	Mississippi River
Size	40
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Irrigation (Supporting), Livestock Watering and Wildlife (Supporting), Recreation (Non-Supporting), Fish and Aquatic Life (Non-Supporting), Domestic Water Supply (Supporting)
Causes	Polychlorinated biphenyls, Sedimentation/Siltation, Physical substrate habitat alterations, Dioxin (including 2,3,7,8-TCDD), Nitrates, Chlordane
Sources	Grazing in Riparian or Shoreline Zones, Non-irrigated Crop Production, Dredging (e.g., for Navigation Channels), Sources Outside State Jurisdiction or Borders, Contaminated Sediments

Table 6-11. Stream Segment Information for Munford Sewer Department Lagoon.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
48hr LC50: Fathead Minnows	All Year		Percent	DMin Conc	Quarterly	Grab	Effluent
Ammonia as N (Total)	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
Ammonia as N (Total)	All Year		lb/day	DMax Load	Semi-annually	Grab	Effluent
BOD % removal	All Year	65	Percent	MAvg % Removal	Weekly	Calculated	% Removal
BOD5	All Year	60	mg/L	DMax Conc	3/Week	Grab	Effluent
BOD5	All Year	1001	lb/day	DMax Load	3/Week	Grab	Effluent
BOD5	All Year	751	lb/day	WAvg Load	3/Week	Grab	Effluent
BOD5	All Year	500	lb/day	MAvg Load	3/Week	Grab	Effluent
BOD5	All Year		mg/L	MAvg Conc	3/Week	Composite	Influent (Raw Sewage)
BOD5	All Year		mg/L	DMax Conc	3/Week	Composite	Influent (Raw Sewage)
BOD5	All Year	45	mg/L	WAvg Conc	3/Week	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	3/Week	Grab	Effluent
Bypass of Treatment (Occurrences)	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Wet Weather
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
E. coli	All Year	126	#/100mL	MAvg Geo Mean	3/Week	Grab	Effluent
E. coli	All Year	941	#/100mL	DMax Conc	3/Week	Grab	Effluent
Flow	All Year		MGD	MAvg Conc	Daily	Continuous	Effluent
Flow	All Year		MGD	DMax Conc	Daily	Continuous	Effluent
Flow	All Year		MGD	MAvg Conc	Daily	Continuous	Influent (Raw Sewage)
Flow	All Year		MGD	DMax Conc	Daily	Continuous	Influent (Raw Sewage)
Nitrite + Nitrate Total (as N)	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
Nitrite + Nitrate Total (as N)	All Year		lb/day	DMax Load	Semi-annually	Grab	Effluent
Overflow Use Occurences	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Wet Weather
Overflow Use Occurences	All Year		Occurrences/ Month	MAvg Load	Continuous	Visual	Non Wet Weather
Phosphorus Total	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
Phosphorus Total	All Year		lb/day	DMax Load	Semi-annually	Grab	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	Weekdays	Grab	Effluent
TKN: Total Kjeldahl Nitrogen	All Year		lb/day	DMax Load	Semi-annually	Grab	Effluent
TKN: Total Kjeldahl Nitrogen	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
TSS	All Year	110	mg/L	DMax Conc	3/Week	Grab	Effluent
TSS	All Year	1334	lb/day	WAvg Load	3/Week	Grab	Effluent
TSS	All Year	55	mg/L	MAvg Conc	3/Week	Grab	Effluent
TSS	All Year	917	lb/day	MAvg Load	3/Week	Grab	Effluent
TSS	All Year	80	mg/L	WAvg Conc	3/Week	Grab	Effluent
TSS	All Year	1835	lb/day	DMax Load	3/Week	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Weekdays	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekdays	Grab	Effluent

Table 6-12. Permit Limits for Munford Sewer Department Lagoon.

Compliance History:

The following numbers of exceedences were noted in PCS:

- 10 Biological Oxygen Demand (BOD)
- 1 Escherichia coli

Comments:

0.8 MGD to 2.0 MGD. Plans received 3/6/07 prepared by King Engineering Consultants, for addition of a hypochlorine disinfection system. Plant was upgraded from a minor to a major.

12/19/06 Compliance Evaluation Inspection: A screen will be installed at the weir to prevent debris from entering outfall. Munford consultant engineer is working on disinfection plan. Disinfection at the lagoon will be implemented within one year of permit issuance.

TN0027600 TDEC Meeman-Shelby State Park

Discharger rating: Major
City: Millington
County: Shelby
EFO Name: Memphis
Issuance Date: 6/01/06
Expiration Date: 4/29/10
Receiving Stream(s): Mississippi River at mile 750.0
HUC-12: 080101000402
Effluent Summary: Treated municipal wastewater from Outfall 001
Treatment system: The new system will be three aerated cell lagoon

SEGMENT	TN08010100001_2000
Name	Mississippi River
Size	40
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Irrigation (Supporting), Livestock Watering and Wildlife (Supporting), Recreation (Non-Supporting), Fish and Aquatic Life (Non-Supporting), Domestic Water Supply (Supporting)
Causes	Polychlorinated biphenyls, Sedimentation/Siltation, Physical substrate habitat alterations, Dioxin (including 2,3,7,8-TCDD), Nitrates, Chlordane
Sources	Grazing in Riparian or Shoreline Zones, Non-irrigated Crop Production, Dredging (e.g., for Navigation Channels), Sources Outside State Jurisdiction or Borders, Contaminated Sediments

Table 6-13. Stream Segment Information for TDEC Meeman-Shelby State Park.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	70	mg/L	DMax Conc	2/Month	Grab	Effluent
BOD5	All Year	45	mg/L	MAvg Conc	2/Month	Grab	Effluent
D.O.	All Year	1	mg/L	DMin Conc	Weekdays	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Weekdays	Instantaneous	Effluent
Settleable Solids	All Year	1	mL/L	DMax Conc	2/Week	Grab	Effluent
TSS	All Year	100	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	65	mg/L	MAvg Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Week	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Week	Grab	Effluent

Table 6-14. Permit Limits for TDEC Meeman-Shelby State Park.

Comments:

Three cell aerated lagoon system (0.05 MGD) will replace an activated sludge plant (0.1 MGD).

6.4.B. Industrial Permits

TN0000108 ExxonMobil Oil Corporation - Memphis Terminal

Discharger rating: Minor
City: Memphis
County: Shelby
EFO Name: Memphis
Issuance Date: 7/01/05
Expiration Date: 5/31/10
Receiving Stream(s): Mississippi River at mile 734
HUC-12: 080101000404
Effluent Summary: Storm water runoff, tank water draw-off, tank hydrostatic testing water, rack/pump/equipment wash water, truck rinse, monitoring well purge, remediation system water and dock wash water from Outfall 001
Treatment system: Oil/water separator, flow equalization tank, and carbon adsorber

SEGMENT	TN08010100001_1000
Name	Mississippi River
Size	24.9
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Physical substrate habitat alterations, Sedimentation/Siltation, Chlordane, Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls, Nitrates
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4), Grazing in Riparian or Shoreline Zones, Non-irrigated Crop Production, Sources Outside State Jurisdiction or Borders, Dredging (e.g., for Navigation Channels), Contaminated Sediments

Table 6-15. Stream Segment Information for ExxonMobil Oil Corporation - Memphis Terminal.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Benzene	All Year	0.5	mg/L	DMax Conc	Monthly	Grab	Effluent
Ethylbenzene	All Year	0.2	mg/L	DMax Conc	Monthly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Monthly	Totalizer	Effluent
Flow	All Year		MGD	MAvg Load	Monthly	Totalizer	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	Monthly	Grab	Effluent
Pb (T)	All Year	0.1	mg/L	DMax Conc	Monthly	Composite	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Composite	Effluent
Toluene	All Year	1	mg/L	DMax Conc	Monthly	Grab	Effluent
Xylene	All Year	0.5	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-16. Permit Limits for ExxonMobil Oil Corporation - Memphis Terminal.

Compliance History:

The following numbers of exceedences were noted in PCS:

- 2 Settleable Solids

Comments:

A marine terminal that stores and distributes refined petroleum products.

TN0005355 TVA - Allen Fossil Plant

Discharger rating: Minor
City: Memphis
County: Shelby
EFO Name: Memphis
Issuance Date: 9/04/05
Expiration Date: 8/30/10
Receiving Stream(s): McKellar Lake to mile 725.6 of the Mississippi River (Outfalls 001 and 010), Horn Lake cutoff to McKellar Lake (001A), and Mississippi River at mile 725.0 (002, 003)

HUC-12: 080101000404
Effluent Summary: Ash transport water, treated chemical and nonchemical metal cleaning wastewaters, coal pile runoff, low volume wastes, and storm water runoff from Outfalls 001 and 01A (emergency only), ash transport water, treated chemical and nonchemical metal cleaning wastewaters, precipitator & precipitator pad washdown, low volume wastes, and storm water runoff from Outfall 002 (during interim rerouting period), once through condenser cooling water, miscellaneous equipment cooling and lubricating water, air preheater wash water, selective catalytic reduction water and chemical and nonchemical metal cleaning wastewaters (IMP 006) and reverse osmosis reject wastewater from Outfall 003 and intake screen backwash water from Outfall 010

Treatment system: Lagoon system

SEGMENT	TN08010100001_1100
Name	McKellar Lake
Size	13
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Sedimentation/Siltation, Polychlorinated biphenyls, Escherichia coli, Chlordane, Oxygen, Dissolved, Dioxin (including 2,3,7,8-TCDD)
Sources	Sanitary Sewer Overflows (Collection System Failures), Dredging (e.g., for Navigation Channels), Contaminated Sediments, Discharges from Municipal Separate Storm Sewer Systems (MS4)

Table 6-17. Stream Segment Information for Outfall 001, 006 and 101 at TVA-Allen Fossil Plant.

SEGMENT	TN08010211001_0100
Name	Horn Lake Cutoff
Size	16.4
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-18. Stream Segment Information for Outfall 01A at TVA-Allen Fossil Plant.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
48hr LC50: <i>Ceriodaphnia Dubia</i>	All Year	100	Percent	DMin Conc	Annually	Grab	Effluent
48hr LC50: Fathead Minnows	All Year	100	Percent	DMin Conc	Annually	Grab	Effluent
Ag (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Ammonia as N (Total)	All Year		mg/L	DMax Conc	2/Month	Grab	Intake
Ammonia as N (Total)	All Year		mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	All Year		mg/L	DMax Conc	2/Month	Calculated	Effluent net value
Ammonia as N (Total)	All Year		lb/day	DMax Load	2/Month	Calculated	Effluent net value
Ammonia as N (Total)	All Year		lb/day	DMax Load	2/Month	Grab	Effluent
Ammonia as N (Total)	All Year		lb/day	DMax Load	2/Month	Grab	Intake
Cd (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Cr (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Cu (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Fe (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Flow	All Year		MGD	DMax Load	Weekly	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Weekly	Instantaneous	Effluent
Hg (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Mn (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Oil and Grease (Freon EM)	All Year	20	mg/L	DMax Conc	Monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	MAvg Conc	Monthly	Grab	Effluent
Pb (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Se (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
TSS	All Year	100	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Weekly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekly	Grab	Effluent

Table 6-19. Permit Limits for Outfall 001 at TVA-Allen Fossil Plant.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ag (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Cd (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Cr (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Cu (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Fe (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Flow	All Year		MGD	DMax Load	Weekly	Estimate	Effluent
Flow	All Year		MGD	MAvg Load	Weekly	Estimate	Effluent
Hg (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Mn (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Oil and Grease (Freon EM)	All Year	20	mg/L	DMax Conc	Monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	MAvg Conc	Monthly	Grab	Effluent
Pb (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Se (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
TSS	All Year	100	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Weekly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekly	Grab	Effluent

Table 6-20. Permit Limits for Outfall 002 at TVA-Allen Fossil Plant.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Duration of Discharge	All Year	120	Min/Day	DMax Conc	Daily	Pump Log	Effluent
Flow	All Year		MGD	DMax Load	Daily	Estimate	Effluent
Flow	All Year		MGD	MAvg Load	Daily	Estimate	Effluent
Oxidants Total Residual	All Year	0.2	mg/L	DMax Conc	Weekly	Grab	Effluent
Temperature (°C)	All Year		Deg. C	DMax Conc	Daily	Grab	Intake
Temperature (°C)	All Year	44.4	Deg. C	DMax Conc	Daily	Calculated	Effluent
Temperature (°C)	All Year		Deg. C	MAvg Conc	Daily	Grab	Intake

Tables 6-21. Permit Limits for Outfall 003 at TVA-Allen Fossil Plant.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Ammonia as N (Total)	All Year		mg/L	DMax Conc	1/Batch	Grab	Effluent
Cu (T)	All Year	1	mg/L	DMax Conc	1/Batch	Grab	Effluent
Cu (T)	All Year	1	mg/L	MAvg Conc	1/Batch	Grab	Effluent
Fe (T)	All Year	1	mg/L	DMax Conc	1/Batch	Grab	Effluent
Fe (T)	All Year	1	mg/L	MAvg Conc	1/Batch	Grab	Effluent
Flow	All Year		MGD	DMax Load	1/Batch	Estimate	Effluent
Flow	All Year		MGD	MAvg Load	1/Batch	Estimate	Effluent
Oil and Grease (Freon EM)	All Year	20	mg/L	DMax Conc	1/Batch	Grab	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	MAvg Conc	1/Batch	Grab	Effluent
TSS	All Year	100	mg/L	DMax Conc	1/Batch	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	1/Batch	Grab	Effluent
pH	All Year	9	SU	DMax Conc	1/Batch	Grab	Effluent
pH	All Year	6	SU	DMin Conc	1/Batch	Grab	Effluent

Tables 6-22. Permit Limits for Outfall 006 at TVA-Allen Fossil Plant.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
48hr LC50: Ceriodaphnia Dubia	All Year	100	Percent	DMin Conc	Annually	Grab	Effluent
48hr LC50: Fathead Minnows	All Year	100	Percent	DMin Conc	Annually	Grab	Effluent
Ag (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Ammonia as N (Total)	All Year		mg/L	DMax Conc	2/Month	Grab	Intake
Ammonia as N (Total)	All Year		mg/L	DMax Conc	2/Month	Grab	Effluent
Ammonia as N (Total)	All Year		mg/L	DMax Conc	2/Month	Calculated	Effluent net value
Ammonia as N (Total)	All Year		lb/day	DMax Load	2/Month	Calculated	Effluent net value
Ammonia as N (Total)	All Year		lb/day	DMax Load	2/Month	Grab	Effluent
Ammonia as N (Total)	All Year		lb/day	DMax Load	2/Month	Grab	Intake
Cd (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Cr (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Cu (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Fe (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Flow	All Year		MGD	DMax Load	Weekly	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Weekly	Instantaneous	Effluent
Hg (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Mn (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Oil and Grease (Freon EM)	All Year	20	mg/L	DMax Conc	Monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	MAvg Conc	Monthly	Grab	Effluent
Pb (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
Se (T)	All Year		mg/L	DMax Conc	Annually	Grab	Effluent
TSS	All Year	100	mg/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Weekly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Weekly	Grab	Effluent

Table 6-23. Permit Limits for Outfall 01A at TVA-Allen Fossil Plant.

Comments:

Fossil-fueled steam-electric generating plant with 3 coal-fired units and 20 combustion turbines.

June 11,2007: Modification to remove compliance date, January 7, 2008, for complete Compliance Data System data collection for Court remanded 316(b) Rule. Instead will submit "biological monitoring data collected in accordance with the Permittee's Proposal for Information Collection (PIC) plan as developed under the 316(b) requirements prior to their suspension by EPA."

TN0029068 Cargill Incorporated

Discharger rating: Minor
City: Memphis
County: Shelby
EFO Name: Memphis
Issuance Date: 4/01/05
Expiration Date: 2/28/10
Receiving Stream(s): Lake McKellar at mile 2.8
HUC-12: 080101000404
Effluent Summary: Non-contact cooling water from Outfall 001
Treatment system:

SEGMENT	TN08010100001_1100
Name	McKellar Lake
Size	13
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Sedimentation/Siltation, Polychlorinated biphenyls, Escherichia coli, Chlordane, Oxygen, Dissolved, Dioxin (including 2,3,7,8-TCDD)
Sources	Sanitary Sewer Overflows (Collection System Failures), Dredging (e.g., for Navigation Channels), Contaminated Sediments, Discharges from Municipal Separate Storm Sewer Systems (MS4)

Table 6-24. Stream Segment Information for Cargill Incorporated.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	DMax Load	Monthly	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Monthly	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	Monthly	Grab	Effluent
TRC	All Year		mg/L	DMax Conc	Monthly	Grab	Effluent
Temperature (°C)	All Year		°C	DMax Conc	Monthly	Grab	Effluent
Temperature (°C)	All Year		°C	WAvg Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-25. Permit Limits for Cargill Incorporated.

Comments:

A wet corn milling plant that produces corn syrup, cornstarch, corn oil and animal feed from corn.

TN0022543 The Premcor Refining Group, Inc. - Valero Riverside Terminal

Discharger rating: Minor
City: Memphis
County: Shelby
EFO Name: Memphis
Issuance Date: 4/01/05
Expiration Date: 2/28/10
Receiving Stream(s): Mississippi River at mile 734
HUC-12: 080101000404
Effluent Summary: Storm water runoff and hydrostatic test water through Outfall 001, storm water runoff, loading rack washwater, hydrostatic tank test water and tank bottom water through Outfall 002 and storm water runoff through Outfall SW3

Treatment system:

SEGMENT	TN08010100001_1000
Name	Mississippi River
Size	24.9
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Physical substrate habitat alterations, Sedimentation/Siltation, Chlordane, Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls, Nitrates
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4), Grazing in Riparian or Shoreline Zones, Non-irrigated Crop Production, Sources Outside State Jurisdiction or Borders, Dredging (e.g., for Navigation Channels), Contaminated Sediments

Table 6-26. Stream Segment Information for the Premcor Refining Group, Inc. - Valero Riverside Terminal.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Benzene	All Year	0.5	mg/L	DMax Conc	Quarterly	Grab	Effluent
Ethylbenzene	All Year	0.2	mg/L	DMax Conc	Quarterly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Quarterly	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Quarterly	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	Quarterly	Grab	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Quarterly	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Quarterly	Grab	Effluent
Toluene	All Year	1	mg/L	DMax Conc	Quarterly	Grab	Effluent
Xylene	All Year	0.5	mg/L	DMax Conc	Quarterly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Quarterly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Quarterly	Grab	Effluent

Table 6-27. Permit Limits for Outfall 001 at the Premcor Refining Group, Inc. - Valero Riverside Terminal.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Benzene	All Year	0.5	mg/L	DMax Conc	Quarterly	Grab	Effluent
Ethylbenzene	All Year	0.2	mg/L	DMax Conc	Quarterly	Grab	Effluent
Flow	All Year		MGD	DMax Load	Quarterly	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Quarterly	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	Quarterly	Grab	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Quarterly	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Quarterly	Grab	Effluent
Toluene	All Year	1	mg/L	DMax Conc	Quarterly	Grab	Effluent
Xylene	All Year	0.5	mg/L	DMax Conc	Quarterly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Quarterly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Quarterly	Grab	Effluent

Table 6-28. Permit Limits for Outfall 002 at the Premcor Refining Group, Inc. - Valero Riverside Terminal.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Benzene	All Year		mg/L	DMax Conc	Quarterly	Grab	Effluent
Ethylbenzene	All Year		mg/L	DMax Conc	Quarterly	Grab	Effluent
Flow	All Year		GPD	DMax Load	Quarterly	Instantaneous	Effluent
Flow	All Year		GPD	MAvg Load	Quarterly	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year		mg/L	DMax Conc	Quarterly	Grab	Effluent
Settleable Solids	All Year		mL/L	DMax Conc	Quarterly	Grab	Effluent
TSS	All Year		mg/L	DMax Conc	Quarterly	Grab	Effluent
Toluene	All Year		mg/L	DMax Conc	Quarterly	Grab	Effluent
Xylene	All Year		mg/L	DMax Conc	Quarterly	Grab	Effluent
pH	All Year		SU	DMax Conc	Quarterly	Grab	Effluent
pH	All Year		SU	DMin Conc	Quarterly	Grab	Effluent

Table 6-29. Permit Limits for Outfall SW3 at the Premcor Refining Group, Inc. - Valero Riverside Terminal.

Comments:

Storage and distribution terminal for light petroleum oils (distributes aviation gas and diesel fuel wholesale customers). The facility has doubled its capacity.

5/8/06 Compliance Evaluation Inspection: In compliance.

TN0001066 Petroleum Fuel & Terminal Company

Discharger rating: Minor
City: Memphis
County: Shelby
EFO Name: Memphis
Issuance Date: 11/01/05
Expiration Date: 9/30/10
Receiving Stream(s): Unnamed tributary to the Mississippi River at mile 734.0
HUC-12: 080101000404
Effluent Summary: Storm water runoff from loading pad through Outfall 001 and storm water runoff through tank farm through Outfall 002
Treatment system: Lagoon system

SEGMENT	TN08010100001_1000
Name	Mississippi River
Size	24.9
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Physical substrate habitat alterations, Sedimentation/Siltation, Chlordane, Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls, Nitrates
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4), Grazing in Riparian or Shoreline Zones, Non-irrigated Crop Production, Sources Outside State Jurisdiction or Borders, Dredging (e.g., for Navigation Channels), Contaminated Sediments

Table 6-30. Stream Segment Information for Petroleum Fuel & Terminal Company.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
Benzene	All Year	0.5	mg/L	DMax Conc	Monthly	Grab	Effluent
Ethylbenzene	All Year	0.2	mg/L	DMax Conc	Monthly	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Monthly	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Monthly	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	Monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	mg/L	MAvg Conc	Monthly	Grab	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Grab	Effluent
Toluene	All Year	1	mg/L	DMax Conc	Monthly	Grab	Effluent
Xylene	All Year	0.5	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-31. Permit Limits for Outfall 001 at Petroleum Fuel & Terminal Company.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	Monthly	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	Monthly	Grab	Effluent
Benzene	All Year	0.5	mg/L	DMax Conc	Monthly	Grab	Effluent
Ethylbenzene	All Year	0.2	mg/L	DMax Conc	Monthly	Grab	Effluent
Flow	All Year		MGD	MAvg Load	Monthly	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Monthly	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	Monthly	Grab	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Grab	Effluent
Toluene	All Year	1	mg/L	DMax Conc	Monthly	Grab	Effluent
Xylene	All Year	0.5	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-32. Permit Limits for Outfall 002 at Petroleum Fuel & Terminal Company.

Comments:

Receives, stores and distributes petroleum products.

3/26/06 Compliance Evaluation Inspection: In compliance

TN0041530 Lafarge North America

Discharger rating: Minor
City: Memphis
County: Shelby
EFO Name: Memphis
Issuance Date: 10/01/05
Expiration Date: 8/31/10
Receiving Stream(s): Wolf River lagoon to Mississippi River
HUC-12: 080101000404
Effluent Summary: Non-contact cooling water from Outfall 001

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	MAvg Load	Quarterly	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	Quarterly	Instantaneous	Effluent
Temperature Diff. Downstrm & Upstrm (°C)	All Year		°C	DMax Load	Quarterly	Grab	Effluent

Table 6-33. Permit Limits for Lafarge North America.

Comments:

Finished cement is unloaded from barges to silos for later transloading into bulk tanker trucks.

TN0001171 ACL Transportation Services LLC

Discharger rating: Minor
City: Memphis
County: Shelby
EFO Name: Memphis
Issuance Date: 11/01/05
Expiration Date: 9/30/10
Receiving Stream(s): Mississippi River at mile 734.4
HUC-12: 080101000404
Effluent Summary: Storm water runoff, hydrostatic test water, tank bottoms and cleaning water through Outfall 001; hydrostatic test water, treated bilge water, tank bottoms and cleaning water through Outfall 002; treated wash water generated from cleaning inland river tank barges through Outfall 003
Treatment system: Lagoon system

SEGMENT	TN08010100001_1000
Name	Mississippi River
Size	24.9
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Physical substrate habitat alterations, Sedimentation/Siltation, Chlordane, Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls, Nitrates
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4), Grazing in Riparian or Shoreline Zones, Non-irrigated Crop Production, Sources Outside State Jurisdiction or Borders, Dredging (e.g., for Navigation Channels), Contaminated Sediments

Table 6-34. Stream Segment Information for ACL Transportation Services LLC.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year		mg/L	DMax Conc	Quarterly	Composite	Effluent
Benzene	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
COD	All Year		mg/L	DMax Conc	Monthly	Composite	Effluent
Ethylbenzene	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
Flow	All Year		MGD	DMax Load	Monthly	Calculated	Effluent
Flow	All Year		MGD	MAvg Load	Monthly	Calculated	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	Monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	mg/L	MAvg Conc	Monthly	Grab	Effluent
Oil and Grease Visual	All Year		YES=1 NO=0	DMax Conc	Monthly	Visual	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TOC	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
TRC	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Composite	Effluent
Toluene	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
Xylene	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-35. Permit Limits for Outfall 001 at ACL Transportation Services LLC.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year		mg/L	DMax Conc	Quarterly	Composite	Effluent
Benzene	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
COD	All Year		mg/L	DMax Conc	Monthly	Composite	Effluent
Ethylbenzene	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
Flow	All Year		MGD	DMax Load	Monthly	Calculated	Effluent
Flow	All Year		MGD	MAvg Load	Monthly	Calculated	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	Monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	mg/L	MAvg Conc	Monthly	Grab	Effluent
Oil and Grease Visual	All Year		YES=1 NO=0	DMax Conc	Monthly	Visual	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TOC	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
TRC	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Composite	Effluent
Toluene	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
Xylene	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-36. Permit Limits for Outfall 002 at ACL Transportation Services LLC.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year		mg/L	DMax Conc	Quarterly	Composite	Effluent
Benzene	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
COD	All Year		mg/L	DMax Conc	Monthly	Composite	Effluent
Ethylbenzene	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
Flow	All Year		MGD	DMax Load	Monthly	Calculated	Effluent
Flow	All Year		MGD	MAvg Load	Monthly	Calculated	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	Monthly	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	mg/L	MAvg Conc	Monthly	Grab	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	Monthly	Grab	Effluent
TOC	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
TRC	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Composite	Effluent
Toluene	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
Xylene	All Year		mg/L	DMax Conc	See Permit	Grab	Effluent
pH	All Year	9	SU	DMax Conc	Monthly	Grab	Effluent
pH	All Year	6	SU	DMin Conc	Monthly	Grab	Effluent

Table 6-37. Permit Limits for Outfall 003 at ACL Transportation Services LLC.

Compliance History:

The following numbers of exceedences were noted in PCS:

- 1 Oil & Grease

Comments:

Transfer (by rail or truck) and storage of bulk petroleum and edible oils with loading and unloading capability between terminal and barge.

5/11/07 Compliance Evaluation Inspection: Minor deficiency noted.

TN0058394 Vertex Chemical Corporation

Discharger rating: Minor
City: Memphis
County: Shelby
EFO Name: Memphis
Issuance Date: 11/01/05
Expiration Date: 9/29/10
Receiving Stream(s): McKellar Lake at approximate mile 4.0
HUC-12: 080101000404
Effluent Summary: Non-contact cooling water from Outfall 001
Treatment system: Lagoon system

SEGMENT	TN08010100001_1100
Name	McKellar Lake
Size	13
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Sedimentation/Siltation, Polychlorinated biphenyls, Escherichia coli, Chlordane, Oxygen, Dissolved, Dioxin (including 2,3,7,8-TCDD)
Sources	Sanitary Sewer Overflows (Collection System Failures), Dredging (e.g., for Navigation Channels), Contaminated Sediments, Discharges from Municipal Separate Storm Sewer Systems (MS4)

Table 6-38. Stream Segment Information for Vertex Chemical Corporation.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	MAvg Load	2/Month	Instantaneous	Effluent
Flow	All Year		MGD	DMax Load	2/Month	Instantaneous	Effluent
Temperature (°C)	All Year		°C	DMax Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Month	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Month	Grab	Effluent

Table 6-39. Permit Limits for Vertex Chemical Corporation.

Comments:

Manufacturer of sodium hypochlorite

TN0074055 Lone Star Industries, Inc. d/b/a Buzzi Unicem USA – Memphis

Discharger rating: Minor
City: Memphis
County: Shelby
EFO Name: Memphis
Issuance Date: 4/01/05
Expiration Date: 2/28/10
Receiving Stream(s): Wolf River Lagoon
HUC-12: 080101000404
Effluent Summary: Non-contact cooling water from Outfall 001
Treatment system: Lagoon system

SEGMENT	TN08010100001_1000
Name	Mississippi River
Size	24.9
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Physical substrate habitat alterations, Sedimentation/Siltation, Chlordane, Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls, Nitrates
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4), Grazing in Riparian or Shoreline Zones, Non-irrigated Crop Production, Sources Outside State Jurisdiction or Borders, Dredging (e.g., for Navigation Channels), Contaminated Sediments

Table 6-40. Stream Segment Information for Lone Star Industries, Inc. d/b/a Buzzi Unicem USA.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Flow	All Year		MGD	DMax Load	Quarterly	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	Quarterly	Instantaneous	Effluent
Temperature (°C)	All Year		°C	DMax Conc	Quarterly	Grab	Effluent
Temperature (°C)	All Year		°C	MAvg Conc	Quarterly	Grab	Effluent

Table 6-41. Permit Limits for Lone Star Industries, Inc. d/b/a Buzzi Unicem USA.

Comments:

Receive and unload barges of portland cement in silos, and load cement into bags or bulk trucks.

TN0067342 Ensley Engineer Yard

Discharger rating: Minor
City: Memphis
County: Shelby
EFO Name: Memphis
Issuance Date: 6/29/06
Expiration Date: 6/30/10
Receiving Stream(s): Horn Lake Cutoff of McKellar Lake to Mississippi River
HUC-12: 080101000404
Effluent Summary: Industrial storm water runoff from Outfalls SW1, SW2, SW3, SW4 and SW5
Treatment system: Lagoon system

SEGMENT	TN08010211001_0100
Name	Horn Lake Cutoff
Size	16.4
Unit	Miles
First Year on 303(d) List	-
Designated Uses	Fish and Aquatic Life (Supporting), Recreation (Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	N/A
Sources	N/A

Table 6-42. Stream Segment Information for Ensley Engineer Yard.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
COD	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
Flow	All Year		MGD	DMax Load	Semi-annually	Estimate	Effluent
Flow	All Year		MGD	MAvg Load	Semi-annually	Estimate	Effluent
Oil and Grease (Freon EM)	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
TSS	All Year		mg/L	DMax Conc	Semi-annually	Grab	Effluent
pH	All Year		SU	DMax Conc	Semi-annually	Grab	Effluent
pH	All Year		SU	DMin Conc	Semi-annually	Grab	Effluent

Table 6-43. Permit Limits for all Outfalls at Ensley Engineer Yard.

Compliance History:

The following numbers of exceedences were noted in PCS:

- 3 Total Suspended Solids

Comments:

Marine maintenance and repair facility for U.S. Army Corps of Engineers. Memphis District floating plant (boats, dredge, barges, etc.) and construction equipment (trucks, cranes, dozers, etc.) are repaired and stored onsite.

Facility failed Whole Effluent Toxicity test in July 2003; as a result, they replaced water-cooled with an air-cooled air compressor. As a result, elimination of Outfall 001 was requested.

TN0073385 Cummings Marine, Inc.

Discharger rating: Minor
City: Memphis
County: Shelby
EFO Name: Memphis
Issuance Date: 2/01/06
Expiration Date: 2/28/10
Receiving Stream(s): McKellar Lake
HUC-12: 080101000404
Effluent Summary: Process wastewater through Outfall 001
Treatment system: Lagoon system

SEGMENT	TN08010100001_1100
Name	McKellar Lake
Size	13
Unit	Miles
First Year on 303(d) List	2004
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Sedimentation/Siltation, Polychlorinated biphenyls, Escherichia coli, Chlordane, Oxygen, Dissolved, Dioxin (including 2,3,7,8-TCDD)
Sources	Sanitary Sewer Overflows (Collection System Failures), Dredging (e.g., for Navigation Channels), Contaminated Sediments, Discharges from Municipal Separate Storm Sewer Systems (MS4)

Table 6-44. Stream Segment Information for Cummings Marine, Inc.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
BOD5	All Year	45	mg/L	DMax Conc	2/Month	Grab	Effluent
BOD5	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
Benzene	All Year	0.005	mg/L	DMax Conc	2/Month	Grab	Effluent
Ethylbenzene	All Year	0.01	mg/L	DMax Conc	2/Month	Grab	Effluent
Flow	All Year		MGD	DMax Load	2/Month	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	1/Batch	Instantaneous	Effluent
IC25 7day <i>Ceriodaphnia dubia</i>	All Year	100	Percent	DMin Conc	Semi-annually	Composite	Effluent
IC25 7day Fathead Minnows	All Year	100	Percent	DMin Conc	Semi-annually	Composite	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	mg/L	MAvg Conc	2/Month	Grab	Effluent
Pb (T)	All Year	0.03	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	30	mg/L	MAvg Conc	2/Month	Grab	Effluent
Toluene	All Year	0.01	mg/L	DMax Conc	2/Month	Grab	Effluent
Xylene	All Year	0.01	mg/L	DMax Conc	2/Month	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Month	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Month	Grab	Effluent

Table 6-45. Permit Limits for Cummings Marine, Inc.

Comments: Treatment system mounted on barge.

TN0067288 Lion Oil Company-Memphis

Discharger rating: Minor
City: Memphis
County: Shelby
EFO Name: Memphis
Issuance Date: 7/01/05
Expiration Date: 5/31/10
Receiving Stream(s): Incline Bayou to Mississippi River at mile 734.0
HUC-12: 080101000404
Effluent Summary: Storm water from tank farm, VRU/pump pads, and loading rack; spills/leaks from rack; effluent from treatment system (includes storm water from additive pad/loading pump pad/vapor recovery pad and tank farm areas), wastewater from tank water draws and truck rack from Outfall 001
Treatment system: Storm water from pads treated in oil/water separator with effluent combined with storm water from tank farm areas along with wastewater in equalization tank followed by two oil water separators and three in-series activated carbon columns.

SEGMENT	TN08010100001_1000
Name	Mississippi River
Size	24.9
Unit	Miles
First Year on 303(d) List	1990
Designated Uses	Fish and Aquatic Life (Non-Supporting), Recreation (Non-Supporting), Irrigation (Supporting), Livestock Watering and Wildlife (Supporting)
Causes	Physical substrate habitat alterations, Sedimentation/Siltation, Chlordane, Dioxin (including 2,3,7,8-TCDD), Polychlorinated biphenyls, Nitrates
Sources	Discharges from Municipal Separate Storm Sewer Systems (MS4), Grazing in Riparian or Shoreline Zones, Non-irrigated Crop Production, Sources Outside State Jurisdiction or Borders, Dredging (e.g., for Navigation Channels), Contaminated Sediments

Table 6-46. Stream Segment Information for Lion Oil Company-Memphis.

PARAMETER	SEASON	LIMIT	UNITS	SAMPLE DESIGNATOR	MONITORING FREQUENCY	SAMPLE TYPE	MONITORING LOCATION
Benzene	All Year	0.5	mg/L	DMax Conc	Monthly	Grab	Effluent
Ethylbenzene	All Year	0.2	mg/L	DMax Conc	Monthly	Grab	Effluent
Flow	All Year		MGD	DMax Load	2/Month	Instantaneous	Effluent
Flow	All Year		MGD	MAvg Load	2/Month	Instantaneous	Effluent
Oil and Grease (Freon EM)	All Year	15	mg/L	DMax Conc	2/Month	Grab	Effluent
Oil and Grease (Freon EM)	All Year	10	mg/L	MAvg Conc	2/Month	Grab	Effluent
Settleable Solids	All Year	0.5	mL/L	DMax Conc	2/Month	Grab	Effluent
TSS	All Year	40	mg/L	DMax Conc	Monthly	Grab	Effluent
Toluene	All Year	1	mg/L	DMax Conc	Monthly	Grab	Effluent
Xylene	All Year	0.5	mg/L	DMax Conc	Monthly	Grab	Effluent
pH	All Year	9	SU	DMax Conc	2/Month	Grab	Effluent
pH	All Year	6	SU	DMin Conc	2/Month	Grab	Effluent

Table 6-47. Permit Limits for Lion Oil Company-Memphis.

Compliance History:

The following numbers of exceedences were noted in PCS:

- 3 Total Suspended Solids
- 1 Oil & Grease
- 1 Benzene

Comments:

Wholesale distribution of diesel fuel and gasoline

2/5/07 Compliance Evaluation Inspection: Minor deficiency noted (update storm water plan per NPDES Permit requirements)